



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,661	12/16/2003	Michael W. Sheperek	TI-36723	6306

23494 7590 02/24/2005

TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER

NORMAN, MARC E

ART UNIT PAPER NUMBER

3744

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/736,661

Applicant(s)

SHEPEREK ET AL.

Examiner

Marc E. Norman

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-11,14-18 and 20-24 is/are rejected.
- 7) ☒ Claim(s) 4,5,12,13 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/16/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6-8, 10, 11, 14-18, and 20-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Hsu.

As per claims 1 and 16, Hsu discloses a method of sensing and controlling the temperature of resistive element of a magnetic storage device comprising detecting a voltage across the element (paragraphs [0011], [0013], [0018], [0059], [0089], [0125] etc.), comparing the voltage to a reference value (paragraphs [0055], [0063] – [0065], [0068], [0091], etc), and altering the power applied to the resistive element to control the temperature (compensation steps of paragraphs [0053], [0060], [0065], etc.). While Hsu does not specifically state that the system is used for a read/write head, this is simply a matter of intended use within the preamble of the claim, and is thus not accorded patentable weight. (For the record, as discussed below, such intended use would have been obvious to one of ordinary skill in the art as an alternative application of the system of Hsu in view of the teachings of Wickramasinghe et al. (U.S. Patent 6,433,310) regarding using a voltage drop for the purpose of thermal sensing of read/write heads (see Figures 1A, 1B, 2A, 2B, column 8, lines 16-23, etc.)).

Art Unit: 3744

As per claims 2 and 17, Hsu discloses the resistive element being a temperature sensing material (paragraph [0129], etc.).

As per claims 3 and 18, Hsu discloses magneto-resistive, giant magneto-resistive, and tunneling materials (paragraph [0015]).

As per claims 6, 7, 20, and 21, Hsu discloses altering either voltage or current (paragraphs [0069] and [0070]).

As per claims 8 and 24, Hsu discloses first resistive elements 136, second resistive element 135, wherein the detecting, comparing, and altering steps are performed on the second element as described above regarding claim 1, and wherein the temperature of the first resistive element is thereby affected (paragraphs [0128] – [0231]).

As per claim 10, Hsu discloses the second resistive element being a temperature sensing material (paragraph [0129], etc.).

As per claim 11, see similar claim 3, above.

As per claims 14 and 15, again Hsu discloses altering either voltage or current (paragraphs [0069] and [0070]) of the temperature sensing (i.e., second) resistor.

As per claims 22 and 23, Hsu discloses temperature compensation circuitry/software 121).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 3744

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu.

As per claim 9, Hsu does not specifically teach the first resistor being a read or write transducer, or a heating element. Official notice is taken that these are simply other applications to which the basic method of Hsu may be applied that would have been obvious to one of ordinary skill in the art at the time the invention was made for the purpose of similarly controlling the temperature of such elements (see for example Figures 1A, 1B, 2A, 2B, column 8, lines 16-23, etc. of Wickramasinghe et al. (U.S. Patent 6,433,310)).

Allowable Subject Matter

Claims 4, 5, 12, 13, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Art Unit: 3744

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc E. Norman whose telephone number is 571-272-4812. The examiner can normally be reached on Mon.-Fri., 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on 571-272-4808. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MN

A handwritten signature in black ink, appearing to read 'Marc Norman', with a stylized, cursive script.

**MARC NORMAN
PRIMARY EXAMINER**